Sidebands

The Newsletter of the EAST GREENBUSH AMATEUR RADIO ASSOCIATION

W2EGB

www.egara.org

September 2024

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EGARA Meetings Resume with APRS Overview

The club's regular monthly meetings will resume on Wednesday, September 11th with a presentation on Amateur Packet Reporting System -- better known as APRS. The session will be conducted by Pete Sochocki, NY2V, and will be designed to introduce club members who want to know more about the technology.

APRS is a digital communication system that sends packets of data via radio waves to exchange messages and information over short distances. It was initially developed by Bob Bruninga, WB4APR, in the 1990s, and has since become extensively used among amateur radio operators.

APRS works by transmitting digital packets of information, such as GPS coordinates, to other stations within range. The packets are then relayed to the APRS network, which consists of a series of Internet-linked gateways and digipeaters. In addition, the International Space Station operates an APRS digipeater which can be used to relay packets while overhead.

APRS has a wide range of applications, including tracking the location of vehicles, people, and weather stations.

During the meeting, members will also be given the opportunity to provide updates on their activities over the summer.

A Kenwood TH-D74 displays a packet received from the ISS, which uses the call sign RS0ISS for its APRS radio.

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Field Day Disappointment

Plans for Field Day 2024 was pared down after only a handful of members signed up to work the event. Instead, members had the opportunity to work Field Day from their home stations.

The original plan was to operate from the Rensselaer County Search and Rescue building during the 24 hours FD was scheduled to run on June 22-23. The club decided to revise its FD plans because of the time involved to set up and the financial investment to provide food and beverages.

"With only a handful of members available to work Field Day, it didn't make sense to set up antennas, equipment and make the other preparations necessary to operate the club stations," said President Bryan Jackson, W2RBJ. He expressed hope that there will be renewed interest in Field Day for 2025.

Next Membership Meeting - September 11, 2024 - 7 pm

On the Beam
News & Notes

Operators Needed for Saratoga Event

On Saturday, September 14th Rosie's Walk/Run For Diabetes will take place in Galway, NY.

Ham Radio operators from Saratoga County and the Great Capital Region have provided communications support for this event over the past 25 years. Again this year, additional radio operators are needed to staff this event to ensure the runners and walkers are kept safe during the event.

If you are able to help with this event please contact Richard Fallis, WB2NLE at **rhfallis@gmail.com** as soon as possible. For more information about the event, visit this link: https://www.galwaylionsclubny.org/?page_id=1769

This will be the 25th year the Lions Club has supported this event but, it will unfortunately be the last time this event will take place.

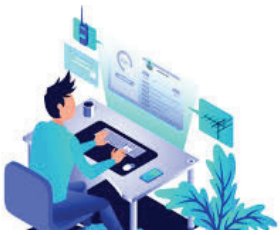
New CW Frequency for W1AW

W1AW will change frequencies on 17-meters beginning on Friday, September 6, 2024.

The Maxim Memorial Station will begin using a new 17-meter frequency for its scheduled CW transmissions due to increased activity near the current bulletin frequency.

In order to reduce the possibility of interference, W1AW will move to 18077.5 kHz.

Free, Live Technician Class Licensing Course on Zoom



A free, weekly, live, Amateur Radio Technician Class Licensing course will begin on Thursday, Sept 5 using online sessions over Zoom. The classes will run through Thursday, October 17 and consist of seven sessions. Each three-hour class will start at 6:30 PM Eastern Time.

These are the classes that have been held for years sponsored by the National Electronics Museum. Club members are urged to let any potential hams they know about this free course.

Those wishing to help should email Rol Anders, K3RA at roland.anders@comcast.net.

VOA Is Shuttering Its Marianas Shortwave Site

Operational costs, minimal audience and lingering damage from 2018 typhoon contributed to the decision

The Voice of America is shuttering its Robert E. Kamosa Transmitting Station in the Northern Mariana Islands. The move was announced in a letter from the United States Agency for Global Media.

"I suspect your organization has heard over the past week(s) about a big change taking place at the U.S. Agency for Global Media's Robert E. Kamosa Transmitting Station or REKTS. The change is a discontinuation of all shortwave radio transmissions at our Saipan and Tinian sites, the first step in closing the station," according to the letter.

REKTS consists of a transmitter and antenna system at Agingan Point at the southwestern point of Saipan. A second transmitter and antenna system is located on the western side of Tinian. The site is used for multi-language programming from Radio Free Asia and Voice of America into East Asia.

William Martin, director of the USAGM transmitting stations and operations division, said: "By now many of you have heard that the "Voice of America" shortwave stations on Saipan and Tinian, which operated under the U.S. Agency for Global Media (USAGM), are closing. After decades of operation, these facilities are being phased out as shortwave audiences migrate to other media. Although these closures mark the end of an era, they are also bittersweet, as in closing these stations we also say farewell to the people and communities that supported our mission for so many years."

In recent years, USAGM has sought to redirect resources from shortwave broadcasting to other channels based upon where it can best reach its desired audiences. In its 2025 budget justification document, the agency noted a full review of short- and medium-wave broadcasting requirements "leading to some reductions in regions where Agency research shows that shortwave audiences have become vanishingly small."

An additional challenge for REKTS was lingering damage from Category 5 Super Typhoon Yutu, which destroyed the station's infrastructure in October 2018. According to USAGM's FY2023 Agency Financial Report, the storm shredded the 16 shortwave curtain antennas at the site and downed one of its support towers. Using salvaged parts, five antennas fully restored by the end of FY 2020, and three more were back in operation by end of FY 2023 with parts for three additional antennas on site.

According the report, the total assets held by USAGM in the Northern Mariana Islands had an approximate book value of $5.4 million as of Sept. 30, 2023.

Previously, USAGM predicted it would have 11 of the 15 REKTS shortwave antennas fully operational by the end of FY2025. Additional capital improvements needed at the site included re-roofing to prevent water leaks.

The site on Saipan first went on air in 1982 as Superrock KYOI, a commercial station targeting Japan with rock and pop music. It was acquired in 1986 by Herald Broadcasting Service. Radio Free Asia began leasing the transmitters in September 1996, purchasing the facility in 1999. Construction of the Tinian site began in 1993 when the U.S. Department of Defense transferred 834 acres of land on the island to the U.S. Information Agency. The first transmissions from the site began in January 1999.

ARRL Urges Protecting the Amateur Radio 902-928 MHz Band

The Federal Communications Commission (FCC) accepted for public comment a Petition for Rulemaking filed by NextNav Inc., a licensee in the 900-MHz Location and Monitoring Service (LMS), to completely reconfigure the 902-928 MHz band and replace the LMS with high-powered 5G cellular and related location services.

The FCC Notice requested comment on the effects that NextNav's proposals would have on Amateur Radio operations in the band. ARRL is preparing comments urging protection of existing and future amateur uses in this band and urges all amateurs to file their own comments describing their activities in this band and the expected effect of the proposed changes.

NextNav currently holds licenses in the 900-MHz band that authorize it to provide services limited to determining the location and status of mobile radio units. NextNav ties its request to provide high-power broadband, cellular and location services to the vulnerabilities of the current satellite-based GPS system and argues that implementation of its proposal would complement GPS by providing an alternative nationwide terrestrial location system in addition to cellular and broadband services. Under its proposal, NextNav would be designated the sole nationwide licensee for this spectrum in exchange for its more limited licenses.

The new nationwide license would authorize NextNav to provide much higher-powered traditional broadband and 5G cellular services as well as the related location service occupying 15 of the total 26 megahertz available in the band. The reconfiguration proposed by NextNav would create a 5-megahertz-wide uplink subband at 902-907 MHz paired with a 10-megahertz downlink subband at 918-928 MHz. The 5-megahertz uplink subband would be limited to use by mobiles with a maximum of 3 watts ERP. On the 10-megahertz downlink subband, up to 2000 watts ERP would be permitted in rural areas and 1000 watts ERP in urban and suburban areas, radiating from tower structures that could reach 1000 or more feet above average terrain. These configurations reflect the FCC's rules for standard cellular configurations that have been adopted to govern a number of other bands used for similar 5G and like services.

Although uses by the Amateur Radio Service in this band are secondary to LMS, NextNav is proposing substantial technical and use changes that would completely alter the foundation upon which the current rules and spectrum sharing arrangements rely and undercut shared use of the band by amateurs as well as a variety of other users. In addition, NextNav proposes deletion of a specific interference provision in the Commission's rules that was adopted to encourage and protect continued sharing with amateurs and other secondary users.

NextNav, in its petition, argues without evidence that the changes that it proposes to the 902-928 MHz band "will not impede amateur operations." In an 8-page description of NextNav's proposal released by the FCC's Wireless Telecommunications Bureau, the FCC staff asks a series of questions that would clarify the proposal and help the Commission ascertain the likely effect of the proposed changes on existing users if the requested changes were adopted. Comment was specifically requested on the extent of amateur operations in the band, the potential impact of the proposed changes, any other spectrum options that may exist, and the costs for relocations if other options exist.

ARRL is preparing comments urging protection of existing and future amateur uses in this band. ARRL urges all amateurs to study the proposal and file their own comments describing their activities in this band and the expected effect of the proposed changes. The filing deadline is September 5, 2024. Replies to comments are due by September 20, 2024.

CW Operators Invited to September Event

CW operators and contesters from around the world are invited to celebrate the fourth anniversary of the weekly K1USN Slow Speed Contest (SST) by participating in a new event -- the K1USN Slow Speed Open. It is set to be held on Friday, September 13, 2024, from 2000 - 2359Z. Moving forward, the event will be held annually on the second Friday in September.

The goals for the new contest are:

- Work as many stations as possible during the four hours on multiple HF bands (160, 80, 40, 20, 15, 10 meters)
- Exchange name and state/province (Non US - VE = DX)
- Score total points x CW speed multiplier x total state/province/DX multipliers
- Post log summary on www.3830scores.com (Do NOT mail logs to K1USN)

Stations may be worked once per band and there is a 50-point bonus for working K1USN once per band.

From its inception in September 2020, the twice-weekly SST has encouraged CW newcomers to join with experienced ops in a relaxed contest at speeds less than 20 words per minute (WPM). Contest sponsors strongly urge all participants to operate at 12 WPM or less to provide new CW ops with a comfortable "on-ramp" to CW operating and contesting.

The same speed rules will apply in the Slow Speed Open with the hope that every station that wishes to jump in will be welcome at a pace comfortable for them. A CW speed multiplier has been added to the score calculation as an incentive to go slow, (via the 3830scores.com submittal form). This speed multiplier is based on your fastest sending speed used during the contest. Certificates with score and claimed maximum operating speed (using the honor system) will be available to all entrants.

For complete SSO information, including rules and FAQs, visit **www.k1usn.com/SST.html**

Need to Pay Your Dues?

It's as easy as www.EGARA.org/pay-dues

What to Do With That Old Antique Radio?

Don't let an old beauty sit gathering dust

By Bryan Jackson, W2RBJ

Maybe it's a hand-me-down from an elderly relative or a friend. Maybe you found it at a flea market, or it has been hidden in the attic for far too long. It could be an anonymous-looking black box with big dials and horn speaker from the 1920s, or an iconic Zenith floor console with big lighted dial and multiple wood veneers from the 1930s, or a multi-colored tabletop model cased in Bakelite plastic from the 1940s. At some point an antique radio may come into your life -- or someone will ask you to help them with that antique they just inherited. What should they do with it?

First, there's a right and wrong way to handle these artifacts, because doing this the wrong way can turn a valuable antique into a destroyed "blue smoke generator."

What's antique?

"In similar fields of collecting such as in furniture, it's widely accepted that anything over 100 years is 'antique,'" said Lisa Edwardson, owner of the online Retro Radio Shop, which sells and restores old radios. "Fifty to 100 years is 'vintage,' and less than 50 years old is 'retro,' which is somewhat of a sub-category of vintage. Just where the bottom threshold of retro lies is quite a gray area."

Chris Deneau is the owner of Renovated Radios in Macomb, Mich., which specializes in making reproduction parts for old radios. "In my opinion, an antique radio is any radio powered with vacuum tubes, which should only be powered up with a variac (a variable AC voltage supply) after a careful electronic inspection," he said.

But, for the sake of this article, they will be referred to all, including vintage/retro transistor radios, as antique radios.

Determining value

Several qualities determine market value of an antique radio including its general availability, its specific brand/model and its condition. "If the radio in question checks off just one of these, it can increase its value," Edwardson said. "If you have a trifecta, you've hit the jackpot."

Quality antique radios that were made in smaller production numbers are much sought after. "As well, if they were made from a fragile material such as glass, or even Catalin —1930s colored phenol formaldehyde resins — fewer of them have survived the years," said Edwardson.

"The Sparton Model 1186 Nocturne is a great example of this, as it was partially made of glass. Any Catalin set is also typically worth more as fewer of these sets have survived due to this material being relatively fragile when compared to Bakelite or wood."

The beautiful Model 1186 Nocturne by Sparton Corp. pictured above, once sat in the lobby of the Park Central Hotel in Miami Beach. Today it is in the Wolfsonian-FIU Museum in Florida. "In 1936, this radio cost $350, nearly as much as a new Ford car," states its website states. "With its shiny exterior and sleek design, this very large floor-model radio is the epitome of design of the time. At its center are knobs and a display console with hands telling you what station you are on. All of the radio components and features are hidden in a cabinet behind the cobalt blue mirrored disk."

Like a vintage car, a radio's brand and model affects its value as a collectible or resale item. Certain radios, thanks to their unique designs, features and/or superior build quality, can fetch more.

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What to do with that antique radio...

"Catalin radios, which are typically swirled and colorful, are highly sought after," Deneau said. "Radios with mid-century or Art Deco looks, chrome fronts and large beautiful dials can also be highly desirable. There are so many variables, it's best to consult someone familiar with values or research exact model numbers." Those variables explain why antique radio prices vary so widely.

"You can look on eBay anytime and find radios for sale for $50 because they don't work, but priced at $1,000 to $2,000 when they're working," said Zach Mumford, general manager of Mumford Restoration in Raleigh, N.C.

"Certain types get a lot more money because they are known for their brand name, such as Zenith. A lot of Zeniths were made in the 1930s, and they have an iconic face plate to them that people really like. They were also known as a 'rich man's radio' back in the day. So collectors will pay a lot more for a restored Zenith floor console than for your average Philco radio, which was more of a 'working man's' radio."

Consulting engineer and RW contributor Charles "Buc" Fitch also cites the beauty of the construction.

"Many radios were replacements for the fireplace in America, as the new center of the living room where families would gather," he said. "The cabinetry could be craftsman-grade. That's a separate restoration in itself."

This beautifully restored Philco Transitone "flying wedge" radio was originally brown and its center wedge was unpainted. Chris Deneau of Renovated Radios customized it after fixing a cracked case.

Plug it in?

Once you have taken possession of an antique radio, your temptation may be to plug it in, turn it on and see if it works. Many people reading this article are qualified to assess the condition of an old radio; but if you aren't one of them, don't just plug the thing in. The aged components and wires in old high-voltage sets can fail and burn — hence the nickname blue-smoke generator.

"It is not advisable to go ahead and plug it in," Chris Deneau says. "There are many things that could cause an 80-year-old piece of history to have some kind of failure."

If it doesn't turn on as you'd hoped, the best-case scenario is that your circuit breaker would trip while the radio's internals get damaged.

Worst-case scenario, it could start a fire because of short circuits within the radio itself.

"Chances are that your house won't immediately burst into flames or you will not get thrown across the room by a high-voltage electric shock," Edwardson concluded. "But there's a better and safer approach than just plugging it in to test."

Old battery-powered transistor radios are not prone to this level of failure, but caution never hurts.

Buc Fitch adds, "AC-powered classic radios should be rewired for three-wire power cords such that exposed or accessible metal parts are at ground potential. Many years ago I had an all-metal cabinet shortwave receiver with two-wire cord; it tingled whenever you touched the cabinet. It turned out to be leakage from the primary winding in the power transformer. Three-wire and a new transformer corrected the issue. Some early AC/DC radios also have hot chassis, hence the 'plastic' cabinets."

Many Amateur Radio operators are quite comfortable handling a soldering iron and replacing old capacitors and out-of-tolerance resistors is something they enjoy. However, others may not wish to poke around under the hood and would prefer to hand such a project over to someone who has the expertise and equipment to do the job properly. In that case, there's a couple of options -- find a fellow ham who can help, or someone who does it professionally,

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What to do with that antique radio...

In my own case, I decided to tackle the restoration myself after a friend gave me a 1940 Detrola radio. The radio's wooden case was a nice shape, so I figured it would be worth the time and effort to get it working again. Fortunately, I was also able to find the original schematic with an online search. But a visual inspection quickly revealed that it would take some work.

First, the AC power cord was frayed, with bare wires even showing through. The capacitors were also all original, with most being the old paper and wax variety. The resistors looked OK, and mica capacitors usually don't go bad, so I decided to leave them "as is". The seven tubes also looked original, so they would need to be checked. Fortunately, club member Steve VanSickle, WB2HPR, offered to test them, as he had a tube tester. Two were bad and replacements were ordered, as were new capacitors. I also increased the voltage rating of the replacement caps, as the original ones didn't have much headroom

After carefully installing the new capacitors one at a time and replacing the power cord, I plugged in my 84 year old relic and turned it on. A warm glow of tube filaments followed and after a few seconds there was sound! But the volume was low. Another trip to see Steve revealed a blown voice coil on the old speaker. A quick jury rig with a new one had the sound level back to normal. I wasn't sure how successful my restoration efforts would be, but I was pleased it all worked out in the end. As a bonus, it also covers shortwave bands!

Find an expert

Instead of rolling the dice on your antique radio's fate by plugging it in, leave it alone and find a respected radio restoration expert to check it out. Many of them will also do complete cabinet restorations, along with finding original/accurate reproductions of missing/aged buttons, dials and knobs, as well as the glass with the right tuning markings.

A Google search will reveal lots of people offering to restore your antique radio. Be sure to check out reviews and references. There are people ranging from hobbyists to dedicated radio restoration companies offering these services, and some are better than others.

As for the experts' advice on finding trustworthy radio restoration shops?

"You can find professional radio service shops through numerous sources," said Edwardson. "And yes, it can be made new again with original parts. It may take some time and effort but it can be done. You can post on **http://www.antiqueradios.com** and request someone near you.

"We have a number of people we can recommend to do restoration work on your radio depending what part of the country you are in. Once again, if you are looking for someone very local, it may be smart to join some of the radio groups on Facebook and ask if there is anyone in your area that would be willing to do the work," Deneau said.

Use it

A restored antique radio is like a restored antique car. It needs to be used (carefully) and maintained to keep it in top condition. So once you've had your antique radio restored, be sure to listen to it every now and then. You'll be astounded just how good even today's AM radio sounds on a receiver designed to do it justice.

"Once restored, use it! It's not recommended to leave it playing unattended for any significant period, but if it has been serviced or restored, use it as often as you like. Keep it dust free and clean, and you'll get many, many hours out of your old gem," " Edwardson said.

Deneau agreed: "Once a radio is properly restored it should be good to use with little to no maintenance. Just keep it clean, dust off the back and enjoy."

Saratoga County Amateur Radio Association

presents our **38th** annual

HAMFEST 2024

Saturday, September 7th; Gates open at 7:00 am

Saratoga County Fairgrounds, 162 Prospect St, Ballston Spa, NY 12020

Only $10 per person includes door prize drawings, 8'x 8' "tailgate" space

***** GRAND PRIZE: YAESU FT-710 FIELD*****

Plus Bucket Prizes which you can purchase tickets for up to three additional big-ticket prizes

******You don't have to be present to win the grand and bucket prizes******

- **NEW AND USED gear and accessories to haggle over**
- **Fox-hunt on the fairground property**
- **Under-cover tables available for $10 each**
- **VE exam to be held at 8:30 am (on site this year!)**
- **Delicious Food served all day**
- **Hourly door prize drawings (must be present to win)**
- **ARRL Representatives**
- **Hands on demos**

Directions:

- **I-87 to Exit 12**
- **West on Rt 67 to Ballston Spa**
- **At intersection of Rts 50 & 67, follow 50 North; look for HAMFEST signs**
- **In village, turn left at Citgo station on Prospect Street; up hill on left**

Talk-In

K2DLL Repeater System

147.000 or 147.240 or 147.360

PL = 91.5 Hz.

GPS Coordinates

43.007438 ° -73.855821 °

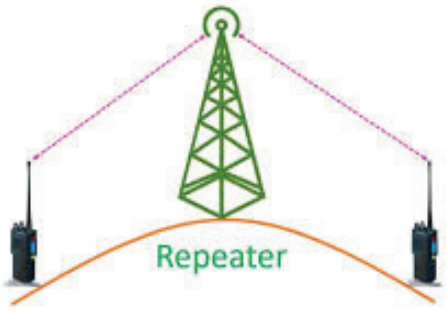
For additional Information contact: Fred Halley, W2EMS
Phone: 518-505-3733 - - - Email: Hamfest@K2DLL.org

See us at: www.K2DLL.ORG or on Facebook at: https://www.facebook.com/K2DLL

A Glossary of Ham Radio Repeater Terms

If you operate regularly, you're likely familiar with these terms. But a refresher never hurts... so here they are:

Break: A word used to interrupt a conversation on a repeater to indicate there's an emergency. You should say "break, break, break" to be sure you're heard. It's not used to join a conversation.



Deviation: This refers to the change in the carrier frequency of an FM transmitter produced by the modulating signal. If you're told your transceiver is over-deviating, talk farther away from the microphone to avoid distortion.

Double: Two or more stations transmitting simultaneously on the same frequency, often without knowing it. The one with the strongest signal wins, but if it's a tie, neither is heard.

Full Quieting: This term usually signifies a good quality signal on a repeater or FM transmission. It means that your signal is clear, free of static, and easily readable.

Half-Duplex: Radio communication using two frequencies, one for receive and one for transmit—one radio at a time.

Hang Time: This is a cure for the double. Waiting briefly between transmissions allows smooth transitions. It also gives others a chance to join in the conversation.

Kerchunking: You have an HT, but will it reach the local repeater? Turning it on, you briefly hit the transmit button and hear a tone in response. Satisfied, you try it again—and again. That's kerchunking—keying up a repeater just because you can. It can really become annoying to anyone monitoring the frequency. The proper way is to say your call sign when you transmit, or something like "KE8XYZ, testing." I even heard of one repeater that reportedly responds with "kerchunk" if it is keyed and no audio is detected.

Machine: This refers to the repeater system itself. You might hear something like, "The 37/97 machine has the best coverage in the county."

Offset/Split: If the repeater output is 146.840 MHz, the input or the frequency the repeater receiver listens on is 146.240 MHz (600 kHz below 146.840 MHz). The offset prevents transmit and receive signals interfering with each other at the repeater. For example, if you're tuned to 146.840 MHz, when you push the mic button your radio automatically transmits on 146.240 MHz, 600 kHz down from 146.840. When you release the mic button, your radio switches back to 146.840 MHz to listen on the repeater's output frequency. Confused? No worries—virtually all ham radios sold today set the offset automatically.

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A Glossary of Repeater Terms...

Open Repeater: A repeater that may be used by any licensed ham radio operator is considered open. Closed repeaters are restricted to exclusive groups, such as members of a club.

PL Tone: PL (private line) tones or CTCSS (continuous tone-coded squelch system) tones are sub-audible tones of 300 Hz and below that are transmitted and detected by radios and repeaters. The tone is transmitted when you talk, and the repeater lets you through if you're using the correct tone. It's used to prevent people accidentally keying up on a repeater frequency or a repeater interfering with another repeater during a band opening. ***Repeater Directory:*** It's a publication that lists repeaters in the U.S., Canada, and other areas. A popular repeater directory is published annually by the ARRL (below). You can also find directories on the Internet from many sources. Do a repeater directory search to locate them.

Simplex: This is communication where hams receive and transmit on the same frequency without using the repeater. It's also called talk around. You can do this to avoid tying up the repeater, especially if you're not far apart.

Time Out: No, you don't have to sit in the corner. This happens when a person talks too long and the repeater time-out timer (TOT) temporarily shuts down the transmitter. There will be a short pause, then the repeater will reset and the conversation continues.

ARRL Pays $1,000,000 in Ransomware Attack

In early May 2024, ARRL's computer systems were infiltrated by hackers using information they had purchased on the dark web. The attackers accessed ARRL's on-site systems and most cloud-based systems. They used a wide variety of payloads affecting everything from desktops and laptops to Windows-based and Linux-based servers. The attack resulted in ARRL being locked out from its computer systems and was followed by a demand from the attackers for a ransom payment to restore access to the systems.

The FBI categorized the attack as "unique" as they had not seen this level of sophistication among the many other attacks, they have experience with.

The ransom demands by the TAs, in exchange for access to their decryption tools, were exorbitant. It was clear they didn't know they had attacked a non-profit organization. However, their ransom demands were dramatically weakened by the fact that they did not have access to any compromising data. It was also clear that they believed ARRL had extensive insurance coverage that would cover a multi-million-dollar ransom payment. After days of tense negotiation, ARRL agreed to pay a $1 million ransom. That payment, along with the cost of restoration, has been largely covered by its insurance policy.

Member updates were posted to a single page on the website and were posted across the Internet in many forums and groups. ARRL believed it was closely monitored by the attackers while it negotiating, leading the organization not yo publicly communicate anything informative, useful, or potentially antagonistic to the attackers during this time frame.

Today, most systems have been restored or are waiting for interfaces to come back online to interconnect them. During the restoration, ARRL has been working to simplify its computer infrastructure to the extent possible. It anticipates it may take another month or two to complete restoration under the new infrastructure guidelines and new standards.

Most ARRL member benefits remained operational during the attack.

An Intro to SDR: The Next Level of Shortwave Radio Listening

If you've heard about SDR -- or Software Defined Radio -- but want to know more, this is for you. It's revolutionizing the way in which people listen to shortwave (SW) radio, or indeed any form of radio broadcast.

SDRs combine plug-in radio receiver dongles/boxes with personal computers, with the computer serving as the user interface. What makes this interface so useful is that the listener's screen displays a wide swath of the bandwidth being tuned to, with each station's signal shown as a visual vertical line that moves and grows/shrinks with its signal strength. In other words, the listener can literally see what is happening across the band in real time, rather than having to turn the dial or push the Up/Down scanning buttons on a conventional shortwave radio, checking one station at a time.

SDRs come with a range of software tools for viewing, filtering and recording sound. One (or more) of these devices is an absolute must for anyone who likes to tune around the bands. And if you own a computer the only device to be bought is the RF receiver dongle/box, which is often less expensive than a standalone SW receiver of similar quality and performance.

How SDRs work

Jon Hudson is co-founder of SDRplay, a maker of wide-band SDR receivers. "Whereas a conventional radio uses electronics hardware to do everything from detecting the signals from an antenna through to creating audio output, an SDR splits the task between hardware and software," Hudson said.

"Typically, the hardware will provide wide-band filtering, choice of spectrum to be monitored, the analog-to-digital conversion and interface circuitry to do two things — to send the digitized signal to, and to receive control information from, the host computer. The computer then performs the user-interface and demodulation functions."

Carl Laufer is the owner of the RTL-SDR blog. "We blog about SDRs and SDR projects, and we sell RTL-SDR dongles, which are low-cost SDRs," Laufer said. "Instead of doing all the 'math' required to demodulate and decode RF signals in analog hardware, an SDR uses an analog-to-digital (ADC) converter to sample and digitize RF signals," he said. "Once digitized we can do all the math to demodulate and decode signals using digital signal processing techniques that are implemented in software."

Dan Robinson is a retired White House, congressional and foreign correspondent for Voice of America. He's a well-known reviewer of HF receivers and has used a variety of SDRs over the past decade. "An SDR can also be described as a radio-on-a-chip, meaning that the functions that a normal traditional radio would perform, such as bandwidth filtering and actual reception, are performed via software with digital solutions instead of analog hardware," he said.

The setup

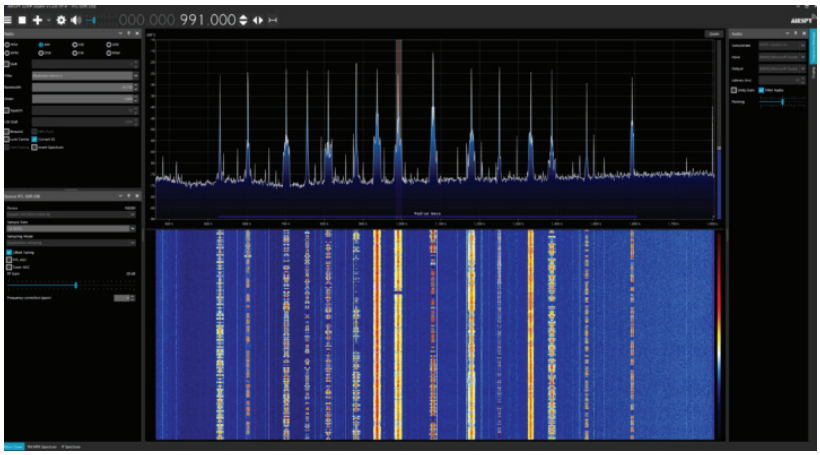
If you're new to SDRs, there are differences of tuning and listening to SW and other RF bands — because SDRs can also cover AM, FM, the amateur bands, weather radio, air traffic, and so many others.

-continued on page 13-

An Intro to SDR...

To identify what stations you might be listening to, there is the WRTH App available at: ***https://shop.radiodatacenter.net/product/wrth-web-app/.*** It's produced by the folks who publish the encyclopedic World Radio & TV Handbook tuning guide, plus the free tuning guide at ***www.short-wave.info/***.

The SDR experience...



Being able to see the band being tuned to can be an amazing experience for those new to SDR. At a glance, you can see which bands have lots of possible targets and which do not. Tuning can be done by using the mouse and scroll wheel. The SDRConnect program also offers buttons that go directly to specific bands (AM, FM, SW, Weather and Amateur among others), which makes tuning easy.

SDR adapters for your computer are easily found with a quick online search. Prices generally begin in the $30 range. However, you would be advised to check the reviews to see how a particular unit actually performs, as some are better than others in their selectivity and reception.

Now for the payoff: Unexpected stations. Being able to check the SW bands visually helps you find stations that may not be readily listed. For instance, you might find African SW stations such as the Voice of America which broadcasts from Selebi-Phikwe in Botswana on 15580 kHz. The BBC World Service from Ascension Island is another, transmitting from the middle of the South Atlantic Ocean below the Equator on 12095 and 15400 kHz. You'll find new stations is usually fairly easy thanks to the visual interfaces used by the SDRs.

If you have ever enjoyed searching through the radio bands — any bands — an SDR is something you should try out.

It makes RF exploration fun again in a whole new way!

Use Your Computer to Try SDR!

You actually don't need anything more than a computer connected to the Internet to try SDR. There are several websites that let you tune the airwaves without any additional equipment. All you need to do is open them in your browser. You'll find an extensive list of these SDR-enabled site at:

http://www.websdr.org/

The list shows SDR websites that are based all over the world. One of the best is located in Milford, Pennsylvanian and can be found online at: ***http://websdr.k3fef.com:8901/***

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CALENDAR

September 11, 2024 - Monthly Club Membership Meeting, 7 pm at Rensselaer County Search & Rescue.

September 7, 2024 - Saratoga County Amateur Radio Assn. Annual Hamfest, Saratoga County Fairgrounds. Gate opens at 7 am. Admission $10.

September 14, 2024 - Rosie's Walk/Run For Diabetes, Galway, NY. Contact Richard Fallis, WB2NLE at rhfallis@gmail.com to sign up.

Pro Tip: RFI Suspects

Radio Frequency Interference -- or RFI -- can take radio listening from pleasant to painful. If noise is ruining your DX experience, here's some common sources that may help you track it down:

- Switching power supplies
- Battery chargers
- LED and CFL lights
- Electronically controlled appliances
- AC wall warts and USB power adapters
- Solar controllers
- Micro controllers
- Inverters
- Gas/propane/diesel/natural gas fueled generators
- Power management devices such as battery "power gates" and transfer switches.
- Street lights and power lines
- Electric motors
- Dimmer switches
- Grow lights

For help in locating RFI at your QTH, download this guide at:
https://www.arrl.org/files/file/RFI/Thompson%20Noise.pdf

The East Greenbush Amateur Radio Association

Organized in 1998, by Bert Bruins, N2FPJ, (SK) and Chris Linck, N2NEH, the East Greenbush Amateur Radio Association, an ARRL affiliate, is committed to providing emergency services, educational programs, and operating resources to amateur radio operators and residents of the Capital Region of New York State. The club station is W2EGB. The club also has several VHF and UHF repeaters open to club members and the public.

GEAR FOR SALE

- **Classic Hallicrafters SX-130 Receiver.** Freshly overhauled and aligned. Offers a 4 band, 7 tube superheterodyne receiver covering AM (broadcast band) and shortwave from 1.725 to 31.5 MHz. The frequency range covers foreign and domestic shortwave broadcasts, amateurs, aircraft, marine and standard AM broadcasts. The receiver also provides for the reception of code (CW), voice (AM) and upper and lower single sideband (SSB) signals. $150.

Contact Bryan at W2RBJ@Outlook.com

- **Heil RS 1 12' Riser** - New and unused. $ 30.00

Contact Walt, N2WJR at N2WJR07@gmail.com

- **VIBROPLEX "Bug" semi-automatic key.** Original "PRESENTATION" Model with Gold Plated baseplate escutcheon. Heavily chromed upper parts, bright red finger pieces, jeweled bearings. Lists for $350, sell only $250, plus postage if shipped. Beautiful wood case.

Contact Steve at: (518) 326-0902 or stevewb2hpr@gmail.com

Sell your unused gear with a free ad in Sidebands!
Send details to: W2RBJ@Outlook.com